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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
CHAUDRY, MUJTABA M	

ART UNIT	PAPER NUMBER
2133	

DATE MAILED: 09/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/601,948	MASSEY, PETER C.	
	Examiner	Art Unit	
	Mujtaba K. Chaudry	2133	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on 27 June 2003.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-21 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-3 and 12 is/are rejected.

7)☒ Claim(s) 4-11 and 13-21 is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 23 June 2003 is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

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DETAILED ACTION

Oath/Declaration

The Oath filed June 23, 2003 complies with all the requirements set forth in MPEP 602 and therefore is accepted.

Drawings

The drawings filed June 23, 2003 are accepted.

Specification

The disclosure is objected to because of the following informalities:

Applicant is reminded of the proper language and format for an abstract of the disclosure.

> ***The abstract should be in narrative form and generally <u>limited to a single paragraph on a separate sheet within the range of 50 to 150 words.</u> It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.***
>
> ***<u>The language should be clear and concise and should not repeat information given in the title or claim(s).</u> It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.***

The abstract of the disclosure is objected to because it is not in conformance with the requirements stated in the MPEP. Applicants are suggested to rewrite the abstract using the information stated above including limiting the abstract to a single paragraph and not more than 150 words.

The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

Arrangement of the Specification

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

(a) TITLE OF THE INVENTION.
(b) CROSS-REFERENCE TO RELATED APPLICATIONS.
(c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
(d) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC (See 37 CFR 1.52(e)(5) and MPEP 608.05. Computer program listings (37 CFR 1.96(c)), "Sequence Listings" (37 CFR 1.821(c)), and tables having more than 50 pages of text are permitted to be submitted on compact discs.) or
REFERENCE TO A "MICROFICHE APPENDIX" (See MPEP § 608.05(a). "Microfiche Appendices" were accepted by the Office until March 1, 2001.)
(e) BACKGROUND OF THE INVENTION.
(1) Field of the Invention.
(2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
(f) BRIEF SUMMARY OF THE INVENTION.
(g) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
(h) DETAILED DESCRIPTION OF THE INVENTION.
(i) CLAIM OR CLAIMS (commencing on a separate sheet).
(j) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).
(k) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

Content of Specification

(a) Title of the Invention: See 37 CFR 1.72(a) and MPEP § 606. The title of the invention should be placed at the top of the first page of the specification unless the title is provided in an application data sheet. The title of the invention should be brief but technically accurate and descriptive, preferably from two to seven words may not contain more than 500 characters.

(b) Cross-References to Related Applications: See 37 CFR 1.78 and MPEP § 201.11.

(c) Statement Regarding Federally Sponsored Research and Development: See MPEP § 310.

(d) Incorporation-By-Reference Of Material Submitted On a Compact Disc: The specification is required to include an incorporation-by-reference of electronic documents that are to become part of the permanent United States Patent and Trademark Office records in the file of a patent application. See 37 CFR 1.52(e) and MPEP § 608.05. Computer program listings (37 CFR 1.96(c)), "Sequence Listings" (37 CFR 1.821(c)), and tables having more than 50 pages of text were permitted as electronic documents on compact discs beginning on September 8, 2000.

Or alternatively, Reference to a "Microfiche Appendix": See MPEP § 608.05(a). "Microfiche Appendices" were accepted by the Office until March 1, 2001.

(e) Background of the Invention: See MPEP § 608.01(c). The specification should set forth the Background of the Invention in two parts:

(1) Field of the Invention: A statement of the field of art to which the invention pertains. This statement may include a paraphrasing of the applicable U.S. patent classification definitions of the subject matter of the claimed invention. This item may also be titled "Technical Field."

(2) Description of the Related Art including information disclosed under 37 CFR 1.97 and 37 CFR 1.98: A description of the related art known to the applicant and including, if applicable, references to specific related art and problems involved in the prior art which are solved by the applicant's invention. This item may also be titled "Background Art."

(f) Brief Summary of the Invention: See MPEP § 608.01(d). A brief summary or general statement of the invention as set forth in 37 CFR 1.73. The summary is separate and distinct from the abstract and is directed toward the invention rather than the disclosure as a whole. The summary may point out the advantages of the invention or how it solves problems previously existent in the prior art (and preferably indicated in the Background of the Invention). In chemical cases it should point out in general terms the utility of the invention. If possible, the nature and gist of the invention or the inventive concept should be set forth. Objects of the invention should be treated briefly and only to the extent that they contribute to an understanding of the invention.

(g) Brief Description of the Several Views of the Drawing(s): See MPEP § 608.01(f). A reference to and brief description of the drawing(s) as set forth in 37 CFR 1.74.

(h) Detailed Description of the Invention: See MPEP § 608.01(g). A description of the preferred embodiment(s) of the invention as required in 37 CFR 1.71. The description should be as short and specific as is necessary to describe the invention adequately and accurately. Where elements or groups of elements, compounds, and processes, which are conventional and generally widely known in the field of the invention described and their exact nature or type is not necessary for an understanding and use of the invention by a person skilled in the art, they should not be described in detail. However, where particularly complicated subject matter is involved or where the elements, compounds, or processes may not be commonly or widely known in the field, the specification should refer to another patent or readily available publication which adequately describes the subject matter.

(i) Claim or Claims: See 37 CFR 1.75 and MPEP § 608.01(m). The claim or claims must commence on separate sheet or electronic page (37 CFR 1.52(b)(3)). Where a claim sets forth a plurality of elements or steps, each element or step of the claim should be separated by a line indentation. There may be plural indentations to further segregate subcombinations or related steps. See 37 CFR 1.75 and MPEP § 608.01(i)-(p).

(j) Abstract of the Disclosure: See MPEP § 608.01(f). A brief narrative of the disclosure as a whole in a single paragraph of 150 words or less commencing on a separate sheet following the claims. In an international application which has entered the national stage (37 CFR 1.491(b)), the applicant need not submit an abstract commencing on a separate sheet if an abstract was published with the international application under PCT Article 21. The abstract that appears on the cover page of the pamphlet published by the International Bureau (IB) of the World Intellectual Property Organization (WIPO) is the abstract that will be used by the USPTO. See MPEP § 1893.03(e).

(k) Sequence Listing. See 37 CFR 1.821-1.825 and MPEP §§ 2421-2431. The requirement for a sequence listing applies to all sequences disclosed in a given application, whether the sequences are claimed or not. See MPEP § 2421.02.

The disclosure is objected to because:

- On page 1 of the specification the "statement regarding federally..." and "reference to sequence listing" do not need to be listed since they are not applicable. Customarily, only relevant information that applies is listed in the specification.

- On pages 3-4, Applicant makes references to various prior arts including US patents that are not provided in IDS.
- On page 9 of the specification, Applicant refers to background information that should be included in the background section of the specification and not in the detailed description of the invention. However, if Applicant feels that such information is needed in this section than he may refer to it as well.
- The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Appropriate correction is required.

Claim Objections

Claim 2 objected to because of the following informalities:

- The claim refers to a provisional application in the claim language that is not appropriate and should be omitted. Examiner believes that this was unintentional and will disregard such information in the claims.

Appropriate correction is required.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1-20 are rejected under 35 U.S.C. 101 because the language of the claim raises a questions as to whether the claim is directed merely to an abstract idea that is not tied to a technological art, environment or machine which would result in a practical application producing a concrete, useful, and tangible result to form the basis of statutory subject matter under 35 USC 101. The subject matter as claimed is executable with software since no hardware is necessary.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1 and 2 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The term "L" is not defined.

Claim 2 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The term "Z" is not defined. The term "equi-likely" is not clear in the claim language and it will not be given any consideration for patentability.

Appropriate correction is required.

Allowable Subject Matter

Claims 4-11 and 13-21 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The Examiner would like to point out that all other objection/rejections must be satisfied regarding the claims as well.

Claim Rejections - 35 USC § 103

The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-3 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Freeman (USPN 6252917) further in view of Gueguen (USPN 6892335).

As per claim 1, Freeman substantially teaches an apparatus for decoding a plurality of encoded messages received over a noisy transmission link, eg., a satellite link or a radio telecoms link comprises a demodulator for demodulating analogue signals to produce a digitized bit stream; an analyzer comprising a received signal strength indicator; a carrier to noise ratio measurement means; a look up table for reading data describing an optimized number of decode iterations; an array of turbo code decoders, each having an associated local storage buffer; and a scheduler means for scheduling demodulated message packets to each of the plurality of decoder

processors, depending upon an estimated optimum number of decode operations required for each message packet. Allocation of the message packets to the plurality of decode processors is made such as to optimize overall utilization of the decode processors. The number of decode processors required for a system is estimated from a statistical analysis of the noise and optimum number of decode iterations required to decode an incoming time division multiplex bit stream having time division messages which differ in noise ratio, and hence require different processing powers for decoding, between successive time division multiplex messages. Freeman teaches (Figure 5 and associated text) to decode noise corrupted encoded signals. In step 500, analyzer 301 assesses a corruption level of each incoming packet, and in step 501 determines a pre-determined number of iterations required to decode the incoming packet signal. In step 502, analyzer 301 pre-pends the data describing the number of iterations to a header on the packet. The message packet and header are sent to scheduler 304 in steps 503. The number of iterations data comprises the metrics data pre-pended to the packet which tells the scheduler 304 how much processing power (i.e., a number of turbo decode iterations) is required to be applied to that packet in order to achieve a predetermined bit error rate. In step 504, scheduler 304 selects one of the plurality of processors to decode the packet, according to a locally operated algorithm in the scheduler, and in step 505 the scheduler sends the packet to the selected processor, which decodes the packet by applying the specified number of iterations as determined from (or a variant of the pre-pended iteration data in step 506.

Freeman does not explicitly teach to perform recursive table look-up decoding for each sub-code as stated in the present application.

However, Gueguen, in an analogous art, teaches a method of optimizing the size of blocks of coded data, intended to be subjected to iterative decoding, the method comprising a first step of evaluating a resource (T) available for the decoding of a block of normal size (N) and a second step of seeking, amongst a plurality of block sizes (N/k) which are submultiples of the normal size by an integer factor (k) greater than or equal to 1 and requiring on average a number of iterations compatible with the said available resource, the one which makes it possible to obtain the lowest error rate at the output of the iterative decoding. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to perform recursive table look-up decoding for each sub-code within the teachings of Freeman. This modification would have been obvious to one of ordinary skill in the art because one of ordinary skill in the art would have recognized that by performing recursive table look-up decoding for each sub-code would have optimized the decoding process.

As per claim 2, Freeman substantially teaches an apparatus for decoding a plurality of encoded messages received over a noisy transmission link, eg., a satellite link or a radio telecoms link comprises a demodulator for demodulating analogue signals to produce a digitized bit stream; an analyzer comprising a received signal strength indicator; a carrier to noise ratio measurement means; a look up table for reading data describing an optimized number of decode iterations; an array of turbo code decoders, each having an associated local storage buffer; and a scheduler means for scheduling demodulated message packets to each of the plurality of decoder processors, depending upon an estimated optimum number of decode operations required for each message packet. Allocation of the message packets to the plurality of decode processors is made such as to optimize overall utilization of the decode processors. The number of decode

processors required for a system is estimated from a statistical analysis of the noise and optimum number of decode iterations required to decode an incoming time division multiplex bit stream having time division messages which differ in noise ratio, and hence require different processing powers for decoding, between successive time division multiplex messages. Freeman teaches (Figure 5 and associated text) to decode noise corrupted encoded signals. In step 500, analyzer 301 assesses a corruption level of each incoming packet, and in step 501 determines a pre-determined number of iterations required to decode the incoming packet signal. In step 502, analyzer 301 pre-pends the data describing the number of iterations to a header on the packet. The message packet and header are sent to scheduler 304 in steps 503. The number of iterations data comprises the metrics data pre-pended to the packet which tells the scheduler 304 how much processing power (i.e., a number of turbo decode iterations) is required to be applied to that packet in order to achieve a predetermined bit error rate. In step 504, scheduler 304 selects one of the plurality of processors to decode the packet, according to a locally operated algorithm in the scheduler, and in step 505 the scheduler sends the packet to the selected processor, which decodes the packet by applying the specified number of iterations as determined from (or a variant of the pre-pended iteration data in step 506.

Freeman does not explicitly teach to perform recursive table look-up decoding for each sub-code as stated in the present application.

However, Gueguen, in an analogous art, teaches a method of optimizing the size of blocks of coded data, intended to be subjected to iterative decoding, the method comprising a first step of evaluating a resource (T) available for the decoding of a block of normal size (N) and a second step of seeking, amongst a plurality of block sizes (N/k) which are submultiples of

the normal size by an integer factor (k) greater than or equal to 1 and requiring on average a number of iterations compatible with the said available resource, the one which makes it possible to obtain the lowest error rate at the output of the iterative decoding. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to perform recursive table look-up decoding for each sub-code within the teachings of Freeman. This modification would have been obvious to one of ordinary skill in the art because one of ordinary skill in the art would have recognized that by performing recursive table look-up decoding for each sub-code would have optimized the decoding process.

As per claim 3, Freeman substantially teaches (Figure 6), in view of above rejections, the data stored in the analyzer means represented by table 1, for multiplexed packets having a carrier to noise ratio of more than 3 dB to achieve a predetermined bit error rate, a turbo decoder should be set for one decode iteration. For multiplex packets having a carrier to noise ratio of between 2.8 and 3 dB two turbo decode iterations are required, and for packet signals having a carrier to noise ratio of between 2.5 and 2.8 dB four turbo decode iterations are required. For signals having a carrier to noise ratio of less than 2.5 dB, decoding of 5 turbo code decode iterations are required. The analyzer means may store a plurality of look up tables containing data as described above, each of the plurality of look up tables relating to a different value of required bit error rate. The header data includes data identifying an optimum number of iterations of turbo code, generated from the look-up table. Output of demodulator 300 comprises a plurality of packets 302, each having an appended header metrics data 303 describing an optimum number of turbo code iterations for decoding that particular packet. Each packet output from the demodulator has a different level of associated noise and corruption, and is identified by the

metrics header data with an instruction for decoding the packet data. A key characteristic of a turbo decode process, is that the process is iterative. Turbo decoders operate using a plurality of "constituent codes". For example, where two constituent codes are used, the decoder operates by firstly attempting to decode a first constituent code, and then attempting to decode a second constituent code. The decoder may then return for a second attempt at decoding the first constituent code, followed by a second attempt at decoding the second constituent code, followed by a third attempt at decoding the first constituent code and so on, over a number of re-iterations, until a required bit error rate has been achieved. Each time the decoding process carries out an iteration the bit error rate of the decoded signal improves. For example, it may be that 10 iterations are required in order to produce a required predetermined bit error rate. During this iterative process, the quality of the decoded signal, measured in terms of bit error rate, converges to a limit which is asymptotically approached. Early iterations provide a marked improvement in the bit error rate of the decoded signal, compared to the demodulated signal which is input into the turbo decoder, whereas successive iterations give a correspondingly smaller incremental improvement in bit error rate and eventually there is reached a limiting bit error rate beyond which it is not possible to improve the quality of the signal, however many iterations are undertaken. Since each iteration of the turbo decoder requires an amount of processing power and utilizes the digital signal processing resources to operate a quantity of instructions, to achieve a common predetermined bit error rate for differing input signals which have different carrier to noise ratio, at any one time a different number of iterations may be being performed on different packets being processed in parallel from one turbo decoder to the next.

As per claim 12, Freeman substantially teaches an apparatus for decoding a plurality of encoded messages received over a noisy transmission link, eg., a satellite link or a radio telecoms link comprises a demodulator for demodulating analogue signals to produce a digitized bit stream; an analyzer comprising a received signal strength indicator; a carrier to noise ratio measurement means; a look up table for reading data describing an optimized number of decode iterations; an array of turbo code decoders, each having an associated local storage buffer; and a scheduler means for scheduling demodulated message packets to each of the plurality of decoder processors, depending upon an estimated optimum number of decode operations required for each message packet. Allocation of the message packets to the plurality of decode processors is made such as to optimize overall utilization of the decode processors. The number of decode processors required for a system is estimated from a statistical analysis of the noise and optimum number of decode iterations required to decode an incoming time division multiplex bit stream having time division messages which differ in noise ratio, and hence require different processing powers for decoding, between successive time division multiplex messages. Freeman teaches (Figure 5 and associated text) to decode noise corrupted encoded signals. In step 500, analyzer 301 assesses a corruption level of each incoming packet, and in step 501 determines a pre-determined number of iterations required to decode the incoming packet signal. In step 502, analyzer 301 pre-pends the data describing the number of iterations to a header on the packet. The message packet and header are sent to scheduler 304 in steps 503. The number of iterations data comprises the metrics data pre-pended to the packet which tells the scheduler 304 how much processing power (i.e., a number of turbo decode iterations) is required to be applied to that packet in order to achieve a predetermined bit error rate. In step 504, scheduler 304 selects

one of the plurality of processors to decode the packet, according to a locally operated algorithm in the scheduler, and in step 505 the scheduler sends the packet to the selected processor, which decodes the packet by applying the specified number of iterations as determined from (or a variant of the pre-pended iteration data in step 506.

Freeman does not explicitly teach to perform recursive table look-up decoding for each sub-code as stated in the present application.

However, Gueguen, in an analogous art, teaches a method of optimizing the size of blocks of coded data, intended to be subjected to iterative decoding, the method comprising a first step of evaluating a resource (T) available for the decoding of a block of normal size (N) and a second step of seeking, amongst a plurality of block sizes (N/k) which are submultiples of the normal size by an integer factor (k) greater than or equal to 1 and requiring on average a number of iterations compatible with the said available resource, the one which makes it possible to obtain the lowest error rate at the output of the iterative decoding. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to perform recursive table look-up decoding for each sub-code within the teachings of Freeman. This modification would have been obvious to one of ordinary skill in the art because one of ordinary skill in the art would have recognized that by performing recursive table look-up decoding for each sub-code would have optimized the decoding process.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Additional pertinent prior arts are included herein for Applicant's review.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mujtaba K. Chaudry whose telephone number is 571-272-3817. The examiner can normally be reached on Mon-Thur 9-7:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Albert DeCady can be reached on 571-272-3819. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Mujtaba Chaudry
Art Unit 2133
September 13, 2005

ALBERT DECADY
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100